Reply to Office action of June 11, 2007

## AMENDMENTS TO THE SPECIFICATION (other than claims)

Please replace paragraph beginning at page 1, line 15, which starts with "Because diamond is composed of," with the following amended paragraph:

Because dDiamond is composed of silicon (Si), which is widely used in semiconductor materials, and carbon (C), which is a Group IVb element in the same family as silicon (Si), which is widely used in semiconductor materials, and because it diamond possesses the same crystalline structure as Si, diamond may be regarded as a semiconductor material. In terms of being a semiconductor material diamond has an extraordinarily large bandgap of 5.5 eV, and a high carrier mobility of 2000 cm²/V • s for electrons/holes alike at room temperature. And with its dielectric constant being a small 5.7, its breakdown electric field is a large 5 × 10<sup>6</sup> V/cm. Diamond also has the unusual property of negative electron affinity, in that its vacuum level is present below the lower edge of its conduction band.

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